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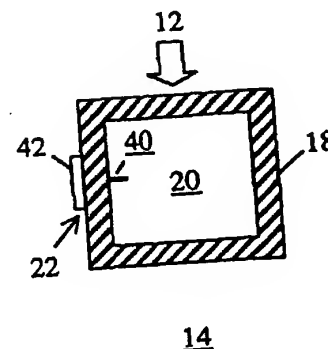
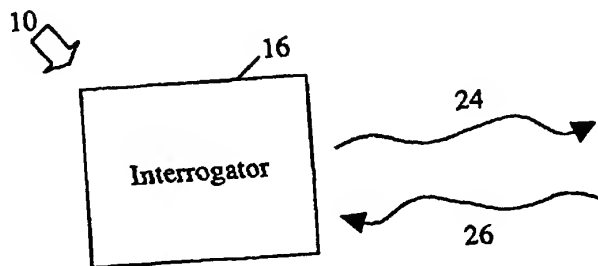
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MEASURING STRAIN IN A STRUCTURE (BRIDGE) WITH A (TEMPERATURE COMPENSATED) ELECTROMAGNETIC RESONATOR (MICROWAVE CAVITY)



(57) Abstract: The system (10) comprises a sensor (18) 90x90x90x30 mm as an electromagnetic microwave cavity (20) with a coupler (22) with a wire (40) and an antenna (42). Cavity (20) produces a response signal (26) in response to an interrogation signal (24) from interrogator (16). Sensor (18) is coupled to a structure (14) to allow a strain to alter the resonance properties. 3.6 GHz is used with a detection of a 2.5 kHz change. If not temperature via strain is detected a mechanical amplifier is used with cavity (20) for temperature compensation. Continuous or intermittent narrowband signals are used as interrogation signals (24). Used with bridges for structural health monitoring. Also for aircrafts, dams, buildings, vehicles.

# INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/GB03/00952

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01L1/25 G01B15/06 G01M19/00 G01D5/48 E01D19/00

According to international Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G01L G01B G01M G01D E01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 212 273 A (MR. FARLEY) 19 July 1989 (1989-07-19) claim 1; figure 1	1, 17
X	FR 2 700 846 A (MR. BRUGIDOU) 29 July 1994 (1994-07-29) page 1, line 6 - line 15 page 3, line 9 - line 19; claim 1; figure 1	25
A	JP 60 203828 A (TOSHIBA) 15 October 1985 (1985-10-15) figures 1-4	
A	JP 05 264474 A (DAIPOOLE) 12 October 1993 (1993-10-12) figures 1-4	
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*Z\* document member of the same patent family

Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US93/00952

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
Category *	Citation of document, with indication, where appropriate, of the relevant passages	
A	DE 20 07 447 A (DECCA) 17 September 1970 (1970-09-17) page 6, line 17 - line 30; figure 1 -----	
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A	US 5 181 423 A (HBM) 26 January 1993 (1993-01-26) column 4, line 24 - line 33; figure 1 -----	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Publication No

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